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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/705,844	11/06/2000	Mitsuaki Oshima	2000 1524	5657
7	590 01/09/2004		EXAMI	NER
WENDEROTH, LIND & PONACK, L.L.P.			LE, AMANDA T	
Suite 800 2033 "K" Stree	et, N.W.		ART UNIT	PAPER NUMBER
Washington, I	OC 20006	•	2634	13
V			DATE MAILED: 01/09/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

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		Application No.	Applicant(s)				
Office Action Summary		09/705,844	OSHIMA, MITSUAKI				
		Examiner	Art Unit				
		Amanda T Le	2634				
	The MAILING DATE of this communication appears on the cover sheet with the correspondence address Period for Reply						
THE I - Externafter - If the - If NC - Failu - Any r	ORTENED STATUTORY PERIOD FOR REPLY MAILING DATE OF THIS COMMUNICATION. Insions of time may be available under the provisions of 37 CFR 1.13 SIX (6) MONTHS from the mailing date of this communication. It period for reply specified above is less than thirty (30) days, a reply opened for reply is specified above, the maximum statutory period or re to reply within the set or extended period for reply will, by statute reply received by the Office later than three months after the mailing and patent term adjustment. See 37 CFR 1.704(b).	36(a). In no event, however, may a reply be tir y within the statutory minimum of thirty (30) day will apply and will expire SIX (6) MONTHS from , cause the application to become ABANDONE	nely filed  s will be considered timely. the mailing date of this communication. D (35 U.S.C. § 133).				
_	Responsive to communication(s) filed on						
•		action is non-final.					
3)□	3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213.						
Disposition of Claims							
4)⊠	4)⊠ Claim(s) <u>50-97</u> is/are pending in the application.						
	4a) Of the above claim(s) is/are withdrawn from consideration.						
5)	5) Claim(s) is/are allowed.						
6)⊠	6)⊠ Claim(s) <u>50-97</u> is/are rejected.						
•	Claim(s) is/are objected to.						
8) Claim(s) are subject to restriction and/or election requirement.							
Application Papers							
9)☐ The specification is objected to by the Examiner.							
10)☐ The drawing(s) filed on is/are: a)☐ accepted or b)☐ objected to by the Examiner.							
	Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).						
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).							
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.							
Priority under 35 U.S.C. §§ 119 and 120							
a)( 13)	Acknowledgment is made of a claim for foreign All b) Some * c) None of:  1. Certified copies of the priority document: 2. Certified copies of the priority document: 3. Copies of the certified copies of the priority application from the International Bureau See the attached detailed Office action for a list Acknowledgment is made of a claim for domestince a specific reference was included in the first 7 CFR 1.78.  Cacknowledgment is made of a claim for domesting the translation of the foreign language process acknowledgment is made of a claim for domesting ference was included in the first sentence of the foreign was included in the first sentence of the foreign language process.	s have been received. s have been received in Application rity documents have been received (PCT Rule 17.2(a)). of the certified copies not received priority under 35 U.S.C. § 119(ast sentence of the specification application has been received to priority under 35 U.S.C. §§ 120	ion No ed in this National Stage ed. e) (to a provisional application) r in an Application Data Sheet. ceived. and/or 121 since a specific				
Attachmen		🗖					
2) Notic	ce of References Cited (PTO-892) ce of Draftsperson's Patent Drawing Review (PTO-948) mation Disclosure Statement(s) (PTO-1449) Paper No(s) _	5) D Notice of Informal F	(PTO-413) Paper No(s) Patent Application (PTO-152)				

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## Claim Rejections - 35 USC § 103

- 1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
- 3. Claims 50-97 are rejected under 35 U.S.C. 103(a) as being unpatentable over Halbert-Lassalle et al (U.S. 5,197,061, IDS filed on 11/06/00) in view of Lawrence et al (5,164,963, IDS filed on 11/06/00).

Regarding claims 50-53, 74-77, 66-69, Halbert-Lassalbe et al discloses a device for the transmission of digital data comprising the following claimed limitations: "a first error correction code (ECC) encoder operable to encode the first data stream to produce an ECC encoded first data stream" (Fig. 3, 301); "a second error correction code (ECC) encoder operable to encode the second data stream to produce an ECC encoded second data stream" (Fig. 3, 304), "a modulator operable to modulate the ECC encoded first data stream according to an m-level PSK and to modulate the ECC encoded second data stream according to an n-level PSK to

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produce modulated signals" (Fig. 3, 311, 314), "an inverse Fast Fourier transformer (IFFT) operable to convert the modulated signals into IFFT converted signals, a transmitter operable to transmit the IFFT converted signals." (Fig. 3, 32)

Regarding claims 58-61, 66, 82-85, 90-93, Halbert-Lassalle et al further discloses the following claimed limitations: "a Fast Fourier Transformer (FFT) operable to convert an input signal into a FFT converted signal; wherein the input signal has information of a first data stream and a second data stream, both of which are ECC encoded, said ECC encoded first data stream is modulated according to an m-level PSK, said ECC encoded second data stream is modulated according to an n-level PSK" (Fig. 3, 35); "a first error correction code (ECC) decoder operable to decode the first demodulated data steam to produce the first data stream" (Fig. 3, 36), "a second error correction code (ECC) decoder operable to decode the second demodulated data stream to produce the second data stream" (Fig. 3, 37). With respect to the claimed limitation "a demodulator operable to demodulate the FFT converted signal to produce a first demodulated data stream and a second demodulated data stream", it would have been obvious to one of ordinary skill in the art at the time of the invention that "the demodulation process" described by Halbert-Lassalle et al (Fig. 3, 34) can be carried out after the FFT process (Fig. 3, 35) if either PSK or QAM, not both, modulated signals are received at the receiver.

For the above claims, the prior art differs from the claimed invention in that the ECC schemes are not specifically taught as being BCH and RS. Nonetheless, such coding techniques are well known in the art at the time of the invention (see Lawrence et al, col. 11, lines 15-23). Since Halbert-Lassalle et al teaches the use of different channel coding technique for different data streams to obtain different level of protections, as stated above, it would have been obvious

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to one of ordinary skill in the art at the time of the invention to employ any well known coding techniques in the art, such as BCH or RS codings, to implement Halbert-Lassale et al's

teachings. The selection of the channel encoding technique depends on the design criteria of the

particular system. BCH codes are known for its random error correction capability. Reed

Solomon codes are known as very efficient and most useful when multi-bit characters are being

error-checked.

With respect to claims 54-57, 62-65, 70-73, 78-81, 86-89, 94-97, Halbert-Lassalle et al

discloses all the subject matters claimed, as explained above, except for "to modulate the ECC

encoded second data stream according to an n-level QAM to produce a modulated signals". In

other words, the prior art reference differs from the claimed invention in that it specifies the

modulation types to be n-PSK and m-QAM, rather than m-QAM and n-QAM. Nonetheless, the

prior art further teaches that the protection level may be adapted by acting on the type of

modulation and the type of modulation may be variable (col. 9, lines 48-63). It would have been

obvious to one of ordinary skill in the art at the time of the invention to select m-OAM and n-

QAM as the two types of modulation to be used for achieving the desirable protection level. The

particular selection is simply is a matter of choice to meet the design criteria of a particular

application.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this 4.

Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Amanda** Le whose telephone number is (703) 305-4769.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Stephen Chin**, can be reached at (703) 305-4714.

## Any response to this action should be mailed to:

Commissioner of Patents and Trademarks Washington, D.C. 20231

or faxed to:

## (703) 872-9306 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

AMANDAT.LE
PRIMARY EXAMINER